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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/609,532	06/30/2000	Katsuya Nagashima	Q59989	2000

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EXAMINER

CHANG, EDITH M

ART UNIT	PAPER NUMBER
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2637

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/609,532

Applicant(s)

NAGASHIMA, KATSUYA

Examiner

Edith M Chang

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 01, 2004 has been entered.

Claim Objections

2. Claims 12-13 are objected to because of the following informalities:

Claim 12, line 4: "and adding" is suggested changing to "and said adding".

Claim 13 is dependent on the objected claim 12.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 5 and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described

Art Unit: 2637

in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 5, “wherein said adders input said received quality” does not taught in the disclosure of FIG.1 wherein the adders such as 6, 7 and 8 are the “said adders”. The “said adders” are the same adders recited in claim 1 for obtaining phase differences and the same adders recited in claim 4 wherein a received quality obtained or generated as a difference between each respective phase difference and an ideal value. Hence, in FIG.1, the “said adders” are such as adders 6, 7 and 8, therefore, the “said adders” in “wherein said adders input said received quality” are the same adders recited in claim 1 and claim 4 which do not receive/input said received quality generated by themselves and by using a feedback circuit.

Claim 13, line 2: “said adding signals process inputs...” does not taught in the disclosure of FIG.1 wherein the adders such as 6, 7 and 8 perform said adding signals. The “said adding signals” are the same adding signals recited in claim 10 to obtain a phase differences and the same adding signals recited in claim 12 wherein a received quality obtained as a difference between each respective phase difference and an ideal value. Hence, in FIG.1, the “said adding signals” are performed by such as adders 6, 7 and 8, therefore, the “said adding signals” in “wherein said adding signals process inputs said received quality” are the same adding signals recited in claim 10 and claim 12, wherein the adders perform the said adding signals do not receive/input said received quality generated by themselves and by using feedback.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, lines 6-7: "the current symbol is detected" lacks antecedent basis that in line 3 of this claim "a current symbol to be demodulated" recited. It does not clearly indicate what is "the current symbol *is detected*".

Claim 6, line 3: "said detected phase difference" lacks antecedent basis.

Claim 7, line 4: "said adders" and "said feedback circuit" lack antecedent bases; "said differences" does not clearly indicate which "differences" recited in lines 3 and 4 of claim 1.

Claim 8, lines 5-6: "the number of bits" lacks antecedent basis.

Claim 9, line 3: "applying feedback" does not clearly indicate what is being applied or applying feedback to what, it fails to clearly point out the subject matter "applying feedback"; line 6: "the current symbol is detected" lacks antecedent basis that in lines 2-3 of this claim "a current symbol to be demodulated" recited. It does not clearly indicate what is "the current symbol *is detected*".

Claim 15, lines 3-4: "said feedback amounts", "said adding process", and "said difference" lack antecedent bases.

Claim 16, line 5: "the number of bits" lacks antecedent basis.

Claims 2-5 and 10-14 are directly or indirectly dependent on the rejected claims 1 and 9.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagi et al. (US 5,528,627) in view of Adachi (US 5,654,667).

Regarding **claim 17**, In FIG.2, Yanagi et al. teaches a signal reception system comprising an adaptive filter (12, as a first weighting circuitry) applying respective weighting factors (FIG.3, column 4 line 67-column 5 line 5) to error signals generated by the error signal control circuit (20); a differential detection circuit (13) receiving a current symbol (from 12) and a delayed symbol (from 13-1) detecting and outputting the difference (column 3 lines 61-67), but not explicitly specify the details of the differential detection operations.

However, in FIG.3, Adachi teaches the differential detection wherein the difference of the current symbol and a delayed symbol (the output of P23) is weighted by P24 via P25 (as a second weighting circuit). As Yanagi et al. using the differential detection operations in the reception system (column 3 lines 61-64), at the time of the invention, it would have been obvious to a person of ordinary skill in the art to implement the differential detection taught by Adachi in the differential detection ckt of Yanagi et al. in order to have an efficient differential detection capable of obtaining an excellent error rate performance (column 1 line 62-column 2 line 3).

Art Unit: 2637

Regarding **claim 18**, Yanagi et al.'s system modified with Adachi's teaching teaches the adaptive filter (12 as a deciding circuit FIG.2 '627) determining an order of priority (FIG.3 '626) for the weighted error signals from (20 FIG.2 '627).

Regarding **claim 20**, Yanagi et al. teaches the external circuit (20) coupled to the detecting circuit (13) to receive the output from the detecting circuit.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagi et al. (US 5,528,627) in view of Adachi (US 5,654,667) as applied to claim 17 above, and further in view of Tsumura (US 5,511,097).

Regarding **claim 19**, Yanagi et al. does not specify the further, Tsumura ('097 is the JP 06205062 referred in the current specification) teaches the feedback loop to adjust the phase difference (107 FIG.1) and adapting itself to various radio wave environment and the kinds of noise (column 1 lines 6-14, column 2 lines 20-30 & lines 30-35) by using said weighting means and said deciding means. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the Tsumura ('097)'s automatic frequency control loop teachings in Yanagi et al.'s error signal control feed back loop to adapt the system to offer a low error rate, stable and correct feedback compensation (column 2 lines 31-35).

Allowable Subject Matter

10. Claims 1-4, 6-12 and 14-16 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action, and the objections set forth in this Office action.

Art Unit: 2637

11. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest, alone or in a combination, among other things, at least a demodulator for a mobile phone and its method as a whole, the combination of elements and features, which includes a received error rate improving means improving a received error rate by weighing difference of symbols before and after a current symbol to be demodulated; a weighting means applying weighting to one or more correction values provided from an external loop; and a deciding means deciding an order of priority for the one or more weighted correction values.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayanti Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

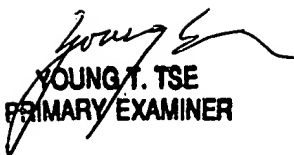
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Application/Control Number: 09/609,532

Page 8

Art Unit: 2637

Edith Chang
March 3, 2005


YOUNG T. TSE
PRIMARY EXAMINER